

ILLINOIS  
AND  
TRAFFIC  
PEDESTRIAN  
STOP STUDY  
2017  
ANNUAL  
REPORT

*Traffic Stop Analysis*

*Submitted by Alexander Weiss Consulting, LLC*



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of Transportation

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# Illinois Traffic Stop Study 2017 Annual Report

## Introduction

This is the fourteenth annual report of the Illinois Traffic Stop Study. Alexander Weiss Consulting, LLC prepared this report for the Illinois Department of Transportation (IDOT). This report describes statewide results and related issues. A separate document includes the results from each agency that participated in the study.

This report examines several items:

- Reporting procedures
- Agency participation
- Stop data
- The ratio of stops of minority drivers to the estimated minority driving population
- The reasons for traffic stops
- The duration of traffic stops
- The outcome of traffic stops
- Consent searches
- Dog Sniffs

## Illinois Traffic Stop Study Procedures

Since January 2004, police agencies in Illinois have been required to submit data about traffic stops to the Illinois Department of Transportation. This requirement is in place through 2019. <sup>1</sup>

A “traffic stop” occurs when an officer stops a motor vehicle for a violation of the Illinois vehicle code, or for a local traffic violation. The Traffic Stop Study data does not include traffic citations arising from traffic crashes, or in cases in which an officer stops a vehicle that has been linked to a specific crime, such as a vehicle wanted in connection with a robbery. <sup>2</sup>

Our analysis of traffic stops in Illinois is based on the following data elements:

- Race of driver
- Reason for the stop
- Duration of the stop
- Outcome of the stop
- Whether a consent search of the vehicle was requested and conducted
- Whether contraband was found during the consent search.
- Whether a dog sniff was conducted and the results of that sniff.

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<sup>1</sup> Public Act 098-0686

<sup>2</sup> If an officer uses a traffic law violation as a pretext to stop a “suspicious” vehicle, that stop should be reported to IDOT.

Agencies must submit traffic stop data for the calendar year to IDOT prior to March 1 of the following year. After a preliminary analysis is conducted the results are posted on a secure site at IDOT so that each agency may review its own results. Agencies have approximately ten days to identify possible errors in the report or to submit comments that are attached to agency reports.

## Agency Participation

In 2017, 930 law enforcement agencies in Illinois submitted traffic stop data to IDOT. This number is down from 2016 when 947 agencies submitted data. The complete list of non-complying agencies appears in Appendix “B”.

## Traffic Stops

In 2017, law enforcement agencies in Illinois reported 2,284,919 traffic stops to IDOT. This represents an increase of 5 percent over 2016. Figure 1 illustrates the number of traffic stops for the period of 2014-2017.<sup>3</sup>

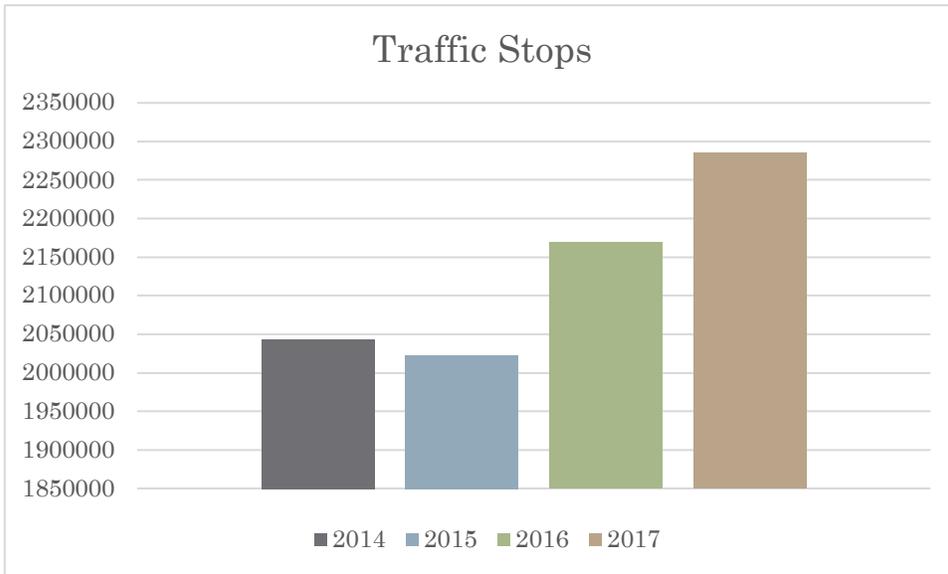


Figure 1 Traffic Stops 2014-2017

<sup>3</sup> Among the more significant changes in stops was for the Chicago Police Department where stops went from 85,965 in 2015 to 187,133 in 2016, to 285,067 in 2017.

In Figure 2 we illustrate the percentage of stops for minority and white drivers.

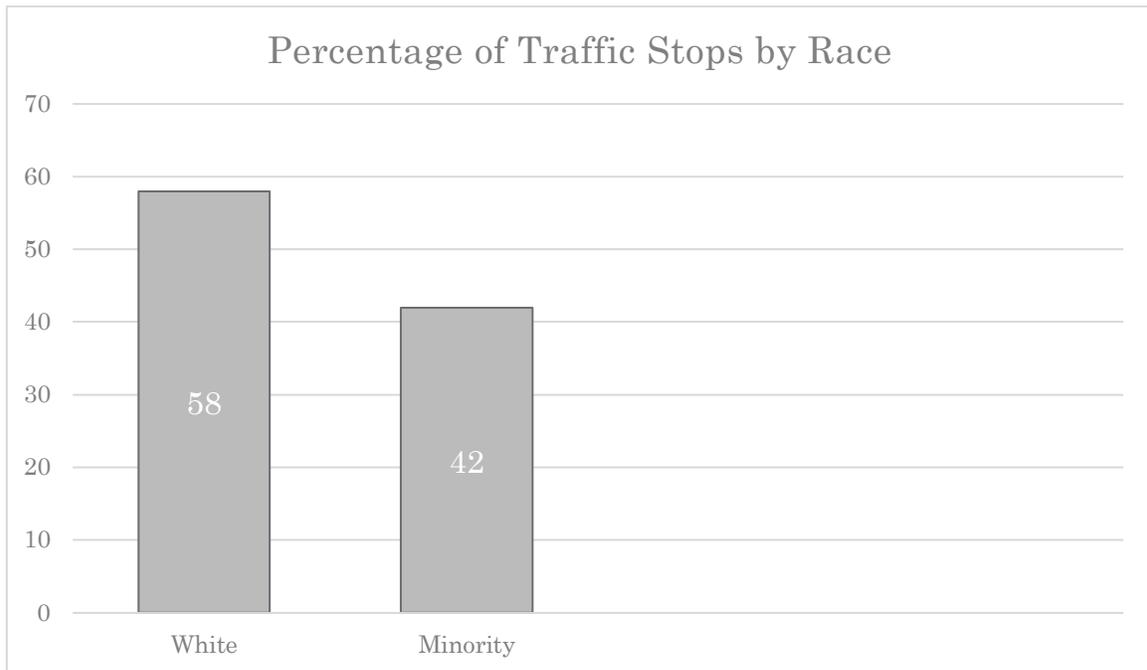


Figure 2 Statewide Traffic Stops: Percentage by Race 2017

Figure 3 shows traffic stops for each of the six racial categories:

- White (WH)
- African-American (AA)
- American Indian (AI)
- Hispanic (HIS)
- Asian (ASN)
- Native Hawaiian or Pacific Islander (NH)

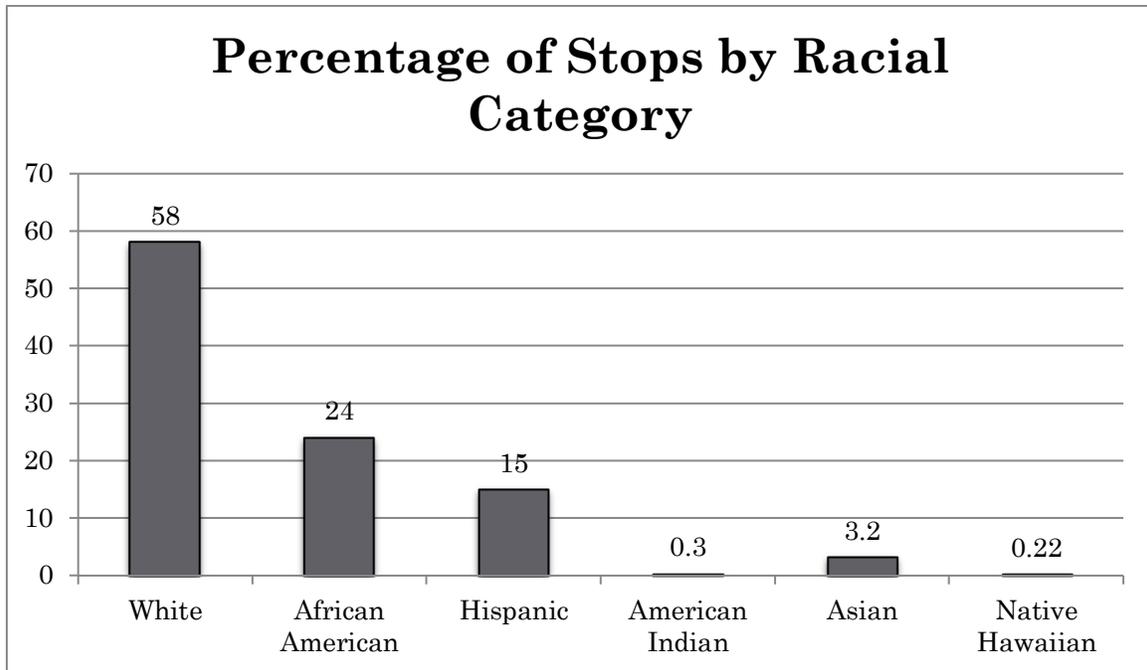


Figure 3 Percentages of Stops by Individual Race

## Ratios

Our analysis uses several measures to test the extent to which race plays a part in traffic stops. We have classified these measures as “pre-stop” measures and “post-stop” measures. Pre-stop measures examine behaviors related to the stopping of the vehicle, and post-stop measures illustrate what happens after the vehicle has been stopped and the officer contacts the driver.

The first pre-stop measure is the “ratio”. This measure looks at the likelihood that minority drivers will be stopped by a law enforcement agency. To quantify this likelihood we calculate the ratio between the percentage of minority stops of an agency and that community’s estimated minority driving population, or as it is often called, the “benchmark”.<sup>4</sup>

To illustrate this idea, consider an agency in which 22% of traffic stops involved minority drivers. In this same community the estimated minority driving population was 20%. The ratio for this agency would be 22/20 or 1.1. In other words, in this community, a minority driver is 10% more likely to be stopped than we would expect based on the estimated minority driving population. A

<sup>4</sup> For a detailed description of the construction of the estimated driving population see the 2004 Annual Report available from IDOT.

ratio of 2, for example, would indicate that a minority driver was twice (100%) as likely to be stopped than we would expect.<sup>5</sup>

In 2017, the statewide ratio was 1.49 up from 2016 when the ratio was 1.38. Figure 4 illustrates the distribution of ratios across the reporting agencies. As we can see 58% of the law enforcement agencies had ratios below 1.25, while 20% had ratios of 2 or greater.

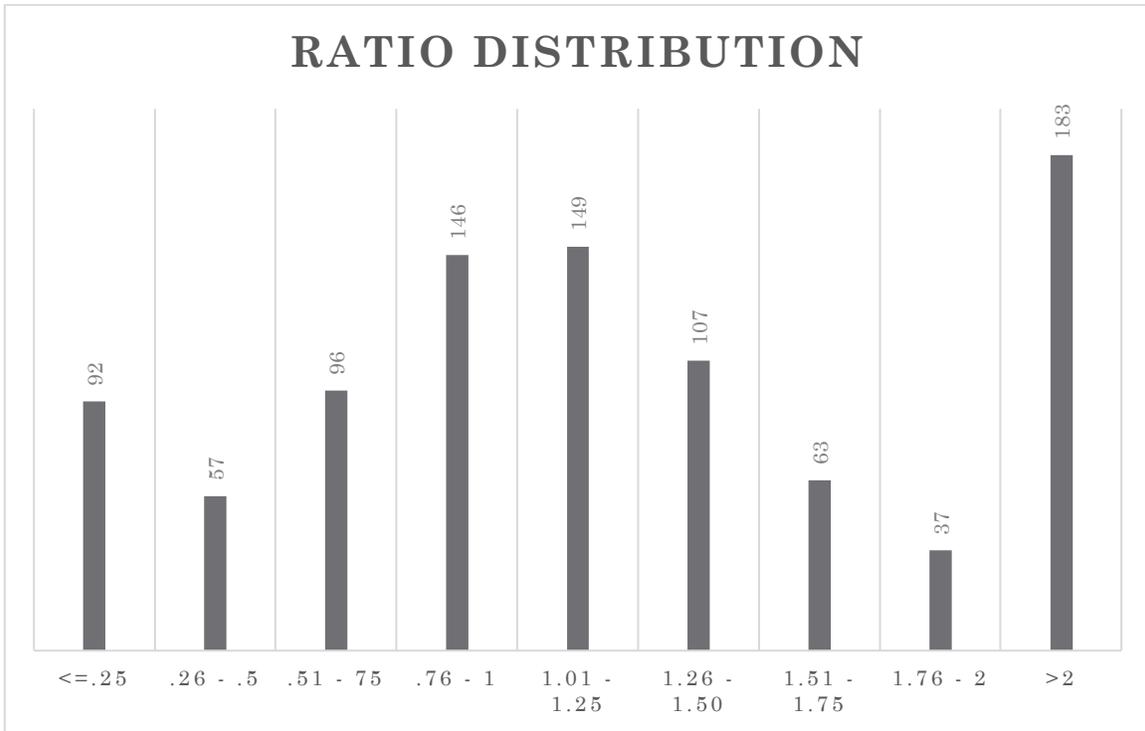


Figure 4 Distributions of Ratios by Agency

## Reason for Stop

The second pre-stop measure is the reason for the stop. We are seeking to determine whether race is a determinant factor in the decision to make a traffic stop. To do this we examine the distribution of reasons within race, assuming that if race is not a factor the distribution of reasons within each race will be similar. This is illustrated in Figure 5. In this figure we see the reason for the stop as expressed as a percentage of all the stops for that race.

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<sup>5</sup> A ratio of zero occurs when an agency makes no stops of minority drivers.

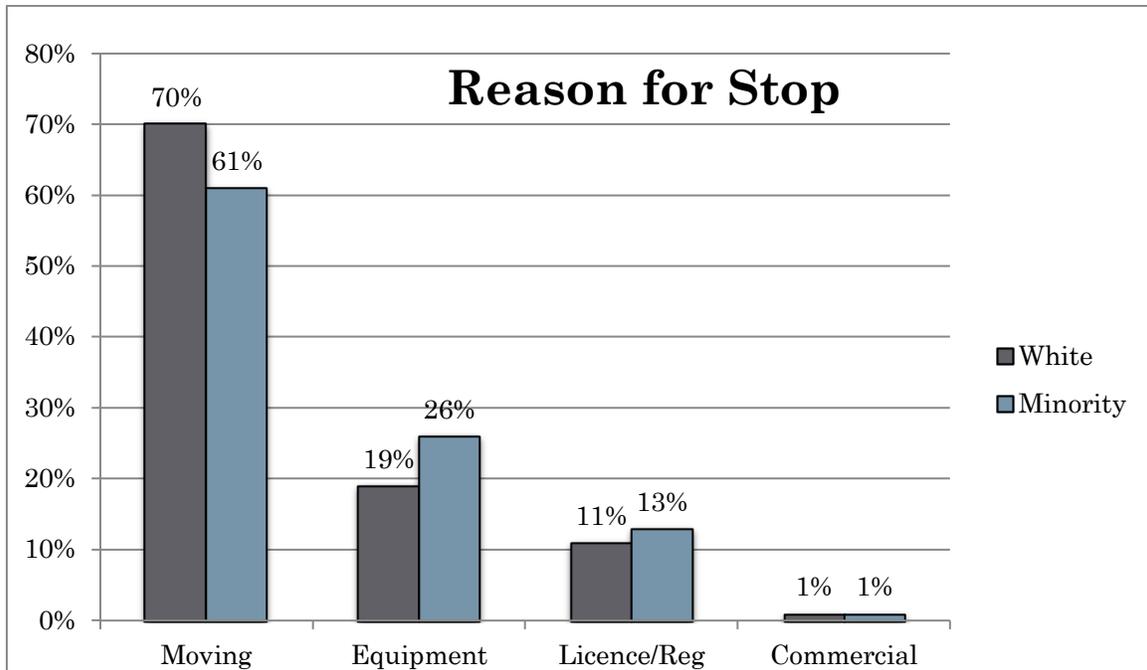


Figure 5 Reasons for Stop by Race

## Duration of Stop

Our first post-stop measure is the duration of the stop. Post-stop measures may be more instructive because by this point in the encounter the officer has contacted the driver and drawn a conclusion about the driver's race.

In our analysis we included two measures of average duration, the *mean* and *median*. The mean is calculated by summing the total time for all traffic stops and then dividing by the number of stops. The mean is susceptible to extreme values. That is, an unusually long traffic stop can cause the mean to be larger, and thus it may not be representative of a central or average value. If we take the times for all the stops and place them in order we can derive the median. The median represents the value *in the middle* of the ordered distribution. Another way of explaining this is that half of the values in the distribution are below the median and half are above. In agencies with a large number of stops the mean is less likely to be skewed by extreme values.

In 2017, the mean duration for stops of both white drivers and minority drivers was 11 minutes. In 2015 and 2016 the average duration for minority drivers was 12 minutes. The median duration for both groups was 10 minutes.

Table 1 illustrates the mean duration times by race for statewide data.

<b>Race</b>	<b>Mean Duration in Minutes</b>
All Drivers	11
White	11
African American	11
American Indian	11
Hispanic	11
Asian	10
Native Hawaiian	10

Table 1 Mean Traffic Stop Duration

## Outcome of Stop

The next post-stop measure is the outcome of the stop. We use three categories to define the outcome: citation, written warning, and verbal warning/stop card.<sup>6</sup> Table 2 compares white drivers and minority drivers on the three possible outcomes. It illustrates the percentage of drivers in the racial category to receive that outcome. For example, 40% of white drivers were cited and 38% of minorities were cited.

	<b>White</b>	<b>Minority</b>
Citation	40%	38%
Written Warning	36%	25%
Verbal Warning/Stop Card	24%	37%

Table 2 Traffic Stop Outcomes by Race

In 2017, there were 891,058 traffic stops in which a citation was issued (virtually unchanged over 2016). A citation was issued in 39% of all stops (down from 41% in 2016).

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<sup>6</sup> Not all agencies issue written warnings.

Figure 6 shows the relationship between race and whether a citation was issued during a stop.

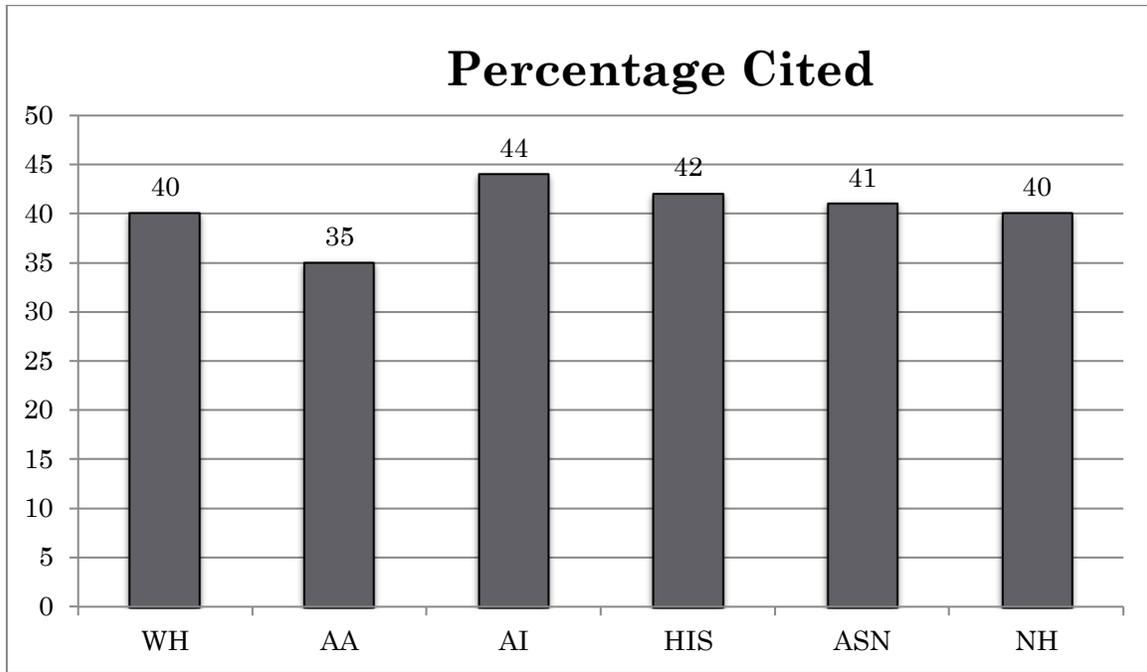


Figure 6 Percentage Cited by Race

## Consent Searches

The next post-stop analysis examines vehicle consent searches<sup>7</sup>. Consent searches are an important element in the examination of bias in traffic stops. Police officers have many legal justifications for searching motor vehicles without a warrant. Courts have, in general, given police officers wide latitude in conducting such searches, because when the vehicle is "released" any evidence in the vehicle may be unrecoverable. We are particularly interested in consent searches, those in which the decision to request a search is largely that of the individual officer.

In our analysis we treat the consent search as a four step-process:

1. Was a consent search requested?
2. Was permission to conduct the search granted?
3. Was the search conducted?

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<sup>7</sup> Data is also collected concerning consent searches of drivers and passengers; however, this analysis only examines consent searches of vehicles.

4. Was contraband found during the consent search?

In 2017 police officers performed 21959 vehicle consent searches. This equates to a consent search occurring in slightly less than one percent of all stops.

The following table illustrates consent searches performed by race.

<b>Race</b>	<b>Number of Vehicle Consent Searches</b>
WH	11094
AA	6936
AI	65
HIS	3604
ASN	239
NH	21

Table 3 Vehicle Consent Searches by Race

Most law enforcement agencies perform few, if any vehicle consent searches. In fact, in 2017, only 43 agencies (about four percent of the participating agencies) performed 100 or more vehicle consent searches. Table 4 illustrates the agencies that conducted more than one hundred vehicle consent searches.

<b>AGENCY NAME</b>	<b>COUNT</b>
ILLINOIS STATE POLICE	2024
AURORA POLICE	808
COOK COUNTY SHERIFF	771
SPRINGFIELD POLICE	769
CHICAGO POLICE	749
CICERO POLICE	322
EFFINGHAM COUNTY SHERIFF	318
HANOVER PARK POLICE	308
ROCKFORD POLICE	305
POSEN POLICE	299
BELLEVILLE POLICE	289
WAUKEGAN POLICE	282
JOLIET POLICE	247
GRUNDY COUNTY SHERIFF	237
HOFFMAN ESTATES POLICE	225
EFFINGHAM POLICE	222
OAK LAWN POLICE	216
DANVILLE POLICE	188
MCHENRY COUNTY SHERIFF	183
EVERGREEN PARK POLICE	175
MCLEAN COUNTY SHERIFF	174
MUNDELEIN POLICE	165
HICKORY HILLS POLICE	164
ORLAND PARK POLICE	158
SCHAUMBURG POLICE	157
WILL COUNTY SHERIFF	148
COLLINSVILLE POLICE	146
PEORIA POLICE	145
MORRIS POLICE	138
OAKBROOK TERRACE POLICE	133
ROBINSON POLICE	129
ELGIN POLICE	127
ROCK ISLAND COUNTY SHERIFF	126
BELLWOOD POLICE	114
NAPERVILLE POLICE	114
BLOOMINGTON POLICE	113
CASEYVILLE POLICE	112
FAIRVIEW HEIGHTS POLICE	111
MCDONOUGH COUNTY SO	103
ELMWOOD PARK POLICE	102
ENERGY POLICE	102
FAIRBURY POLICE	102
JERSEYVILLE POLICE	100

Table 4 Agencies that Conducted More than 100 Vehicle Consent Searches

In Table 5, we examine more closely the consent search data by individual race for 2017. There is important information in these findings. First, we observe how infrequently consent searches are requested. Second, we observe the decision to permit consent does not vary much by race, whereas in the past there were marked differences. Third, African American and Hispanic drivers are more likely to be the subject of a vehicle consent search than other drivers, relative to how frequently they are stopped.

	White	African American	American Indian	Hispanic	Asian	NH
Stops	1314968	548806	7462	334956	73675	5070
Requested	13558	8222	72	4096	271	28
Granted (% Of Requested)	11478 (85%)	7115 (87%)	67 (93%)	3694 (90%)	244 (90%)	24 (86%)
Performed (% of Stops)	11094 <b>(.8%)</b>	6936 <b>(1.26%)</b>	65 <b>(.8%)</b>	3604 <b>(1.1%)</b>	239 <b>(.3%)</b>	21 <b>(.4%)</b>

Table 5 Consent Search Process by Race

Next, we examine whether a consent search resulted in a seizure of contraband, defined as drugs, drug paraphernalia, weapons, stolen property, alcohol, or “other” contraband. Knowing whether or not contraband is found allows us to calculate the “hit rate,” or the likelihood that a consent search results in the seizure of contraband.

In 2017 when the vehicle of a white driver was consent searched, police officers found contraband **33%** of the time. By contrast, when a vehicle driven by a minority driver was consent searched, officers found contraband **25%** of the time.

In Figure 7, we illustrate the relationship between driver race for the three largest categories and whether contraband was found. For example, white drivers were involved in 50% of all stops in which a consent search was performed, but 57% of the time contraband was found during a stop it was in a vehicle driven by a white driver. By contrast, Hispanic drivers were involved in 16% of consent searches but in 16% of the cases in which contraband was found.

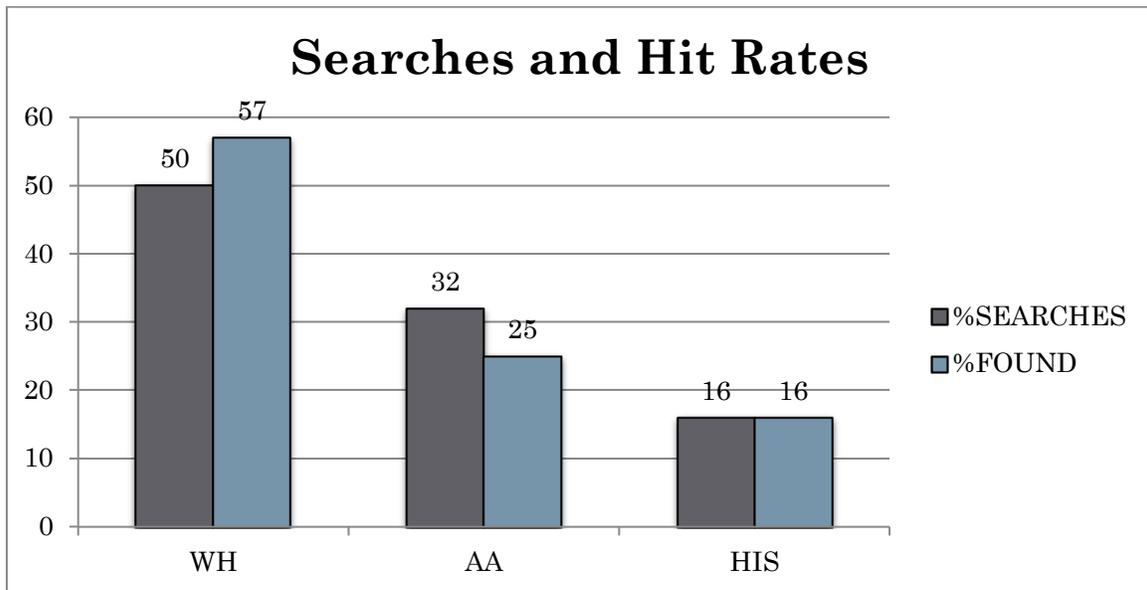


Figure 7 Search and Hit Rates

## Dog Sniffs

In 2017 agencies reported 7783 dog sniffs. Dog Sniffs were conducted in .34% of stops with white drivers, and .34% of stops in which the driver was a minority. Table 6 lists agencies that conducted 100 or more dog sniffs.

AGENCY NAME	COUNT
ILLINOIS STATE POLICE	1665
AURORA POLICE	328
DECATUR POLICE	223
MCLEAN COUNTY SHERIFF	222
ROCKFORD POLICE	217
DANVILLE POLICE	212
BELVIDERE POLICE	190
BUREAU COUNTY SHERIFF	185
MACON COUNTY SHERIFF	140
BLOOMINGTON POLICE	132
ELGIN POLICE	114

Table 6 Agencies with More Than 100 Dog Sniffs

In addition to the number of sniffs conducted, data is also gathered to identify how often the dog alerts, how often a subsequent search of the vehicle is conducted and whether or not contraband is found. The results are shown in Table 7. It is interesting to observe that the results of searches based on dog sniffs are more productive (that is the hit rate is higher) than those of consent searches, and that like those of consent searches dog sniffs of vehicles driven by White drivers yield a higher proportion of contraband.

	White	Minority
Total Dog Sniff Searches	4443	3340
Dog Alerts (% of Searches)	3472 (78.15%)	2495 (74.7%)
Search Performed (% Alerts)	3368 (97 %)	2397 (96.07%)
Contraband Found (% Performed)	2167 (64.34%)	1440 (60.08%)

Table 7 Results of Dog Sniff Searches

## Appendix A: Interpreting Agency Reports

In this section we illustrate how to interpret an agency report. There are two components to each report. The first provides a comparison by race on several measures. The second part provides the “raw” data that is used to conduct the analysis. We begin with the analysis section. The first part of the report provides summary information on the number of stops of White and Minority drivers, the estimated minority driving population for that community, and the ratio.

The next part of the report provides information about the reason for the stop. The percentages provided describe the distribution *within each race*. For example, we observe that there were 248982 stops of minority drivers for equipment violations. This represented about 26% of all the minority stops.

In the third section we describe the outcome of the stop. You will observe that not all agencies issue written warnings, and thus each stop will be classified as either a citation or a verbal warning/stop card.

Next, we can see information about consent searches. Although we include consent search data for all agencies, readers should take great care in drawing conclusions when an agency has fewer than 50 consent searches per year.

Finally, we can observe data about the use of drug detection dogs.

ILLINOIS TRAFFIC STOP STUDY, 2017	
Agency:	ILLINOIS STATE WIDE

Stops		
	White Drivers	Minority Drivers
Total Stops	1314968	969951
Percentage Stops	57.55%	42.45%
Duration (Mean\Median)	11\10	11\10
Estimated Minority Driving Population		28.48
Ratio		1.49

Reason for Stop				
	White Drivers		Minority Drivers	
Total	1314968		969951	
Moving Violations	923913	70.26%	590735	60.90%
Equipment Violations	245170	18.64%	248982	25.67%
Licensing / Registration Violations	139910	10.64%	125621	12.95%
Commercial Vehicle Violations	5975	0.45%	4229	0.44%

Outcome of Stop				
	White Drivers		Minority Drivers	
Total	1314968		969951	
Citation	522035	39.70%	369023	38.05%
Written Warning	477870	36.34%	243496	25.10%
Verbal Warning/ Stop Card	315063	23.96%	357431	36.85%

Vehicle Consent Searches				
	White Drivers		Minority Drivers	
Total	1314968		969951	
Requested	13558	1.03%	12689	1.31%
Granted	11478	84.66%	11144	87.82%
Performed	11094	96.65%	10865	97.50%
Found	3647	32.87%	2700	24.85%

Dog Sniff Searches				
	White Drivers		Minority Drivers	
Total	1314968		969951	
Vehicle Dog Sniff Searches	4443	0.34%	3340	0.34%
Dog Alerts	3472	78.15%	2495	74.70%
Search Performed	3368	97.00%	2397	96.07%
Contraband Found	2167	64.34%	1440	60.08%

Key Indicators	Total	WH	AA	AI	HIS	ASN	NH	N/S	
Stops	2284919	1314968	548806	7462	334956	73657	5070	0	
Duration(Mean/Median)	11\10	11\10	11\10	11\10	11\10	10\10	10\10	0\0	
Reason For Stop	Moving	1514648	923913	315860	5349	211843	54029	3654	0
	Equipment	494152	245170	147310	1503	84960	14186	1023	0
	License	265915	139910	84349	596	35337	5339	384	0
	Commercial Vehicle	10204	5975	1287	14	2816	103	9	0
	N/S	0	0	0	0	0	0	0	0
Outcome of Stop	Citation	891058	522035	191860	3294	141994	29851	2024	0
	Written Warning	721366	477870	129550	2036	87547	23077	1286	0
	Verbal Warning/SC	672494	315063	227395	2132	105415	20729	1760	0
	NS	1	0	1	0	0	0	0	0
Vehicle Consent Searches	Requested	26247	13558	8222	72	4096	271	28	0
	Granted	22622	11478	7115	67	3694	244	24	0
	Performed	21959	11094	6936	65	3604	239	21	0
	Found	6347	3647	1610	20	990	72	8	0
Dog Sniff Searches	Sniffs	7783	4443	2286	16	937	94	7	0
	Alerts	5967	3472	1773	12	646	60	4	0
	Alert Search	5765	3368	1707	12	616	59	3	0
	Found	3607	2167	1056	7	347	30	0	0

## Appendix B: Non-complying Agencies

APPLE RIVER POLICE
ASHKUM POLICE
BEARDSTOWN POLICE
BRADFORD POLICE
BRIDGEPORT POLICE
BUCKLEY POLICE
BUFFALO-MECHANICSBURG POLICE
BUNCOMBE POLICE
COFFEEN POLICE
CROSSVILLE POLICE
EDGAR COUNTY SHERIFF
ELKVILLE POLICE
EWING POLICE
FARINA POLICE
FILLMORE POLICE
FITHIAN POLICE
FREEMAN SPUR POLICE
GERMAN VALLEY POLICE
GREAT LAKES NAVAL STATION
HILLCREST POLICE
HINCKLEY POLICE
HINDSBORO POLICE
HUTSONVILLE POLICE
IRVING POLICE
KILBOURNE POLICE
LADD POLICE
LOSTANT POLICE
LUDLOW POLICE
MANSFIELD POLICE
MARKHAM POLICE
MAZON POLICE
MCNABB POLICE
MENDON POLICE
MEREDOSIA POLICE

NEW BOSTON POLICE
OAK FOREST HOSPITAL OF COOK COUNTY POLICE
PLYMOUTH POLICE
POCAHONTAS POLICE
PRAIRIE DU ROCHER POLICE
RIDGWAY POLICE
ROSSVILLE POLICE
RUTLAND POLICE
SPAULDING POLICE
ST. FRANCISVILLE POLICE
ST. JOHNS POLICE
SUMMERFIELD POLICE
SUMNER POLICE
TISKILWA POLICE
TOLEDO POLICE
VERMONT POLICE
VILLA GROVE POLICE
VIRDEN POLICE
WAMAC POLICE
WASHBURN POLICE
WAYNE CITY POLICE
WESTFIELD POLICE
WINCHESTER POLICE
WINSLOW POLICE
ZEIGLER POLICE